



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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**Serial Number:** 10/672,595

**Filing Date:** 09/26/2003

**Applicant:** Tekippe.

**Title:** Adhesive System for Optical Devices

**Docket Number:** 29165.00

**Examiner:** Charlie Yu Peng

**Art Unit:** 2883

**Customer Number:** 22465

**Declarant:** Roy Guynn

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**DECLARATION OF ROY GUYNN UNDER 37 C.F.R. § 1.132**

1. I, Roy Guynn, declare as follows, under penalty of perjury.
2. I hold a B.S. Mechanical Engineering, awarded in 1968 from Virginia Polytechnic Institute. I hold a M.S. Mechanical Engineering awarded in 1970 from University of Michigan. I hold a Master of Business Administration, awarded in 1979 from University of Richmond.
3. My position at Neptec Optical Solutions, Inc. is Executive Vice President and I have been involved in the conception, design, manufacturing, and testing of fiber optic devices including fiber terminations, actuators, optical switches, and fiber network switches. Before then, I was Vice President of Manufacturing, Product Development and Engineering, at Arroyo Optics in Santa Monica, California. In 1995 I was Senior Manager, Manufacturing Operations, at Lucent Technologies in Reading, Pennsylvania. At AT&T Microelectronics in Reading, Pennsylvania, I was a Senior Manager, Strategic Sourcing; Manager, Business Operations and Quality Engineering; Manager, Product Management. At AT&T Microelectronics in New River Valley Works, Radford, Virginia, I was Manager of Manufacturing and Engineering Manager of Project Management and Quality.

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4. I have reviewed Application Serial Number 10/672,595, filed on 09/26/2003, and titled "Adhesive System for Optical Devices." The paragraph numbers referenced below are the paragraph numbers of the Application as filed, which are different than the paragraph numbers in the published application, Number 2004/0057129.

5. I have reviewed United States Patent Number 6,282,349, titled "Launch fiber termination," and issued to Griffin on August 28, 2001, and filed on February 17, 2000 (Griffin).

6. I have reviewed United States Patent Number 6,757,471, titled "Optical fiber block assembly for minimizing stress concentration and contacting device therewith," and issued to Jeong, *et al.*, on June 29, 2004, and filed on October 21, 2002 (Jeong). The Jeong patent discloses an optical fiber block assembly for securing the ends of a plurality of fiber optic cables **BF** and their associated fiber ends **BF**. The block assembly includes a cover **C4, C5, C6, 50** and a block **30**. Jeong, Col. 4, lines 16-65; FIGS. 2-13. The cover **C5**, in one disclosed embodiment, includes a single slot, or a channel, **506** formed transverse to the longitudinal axis of the fiber ends **BF**, that is, the ridges **504, 505** defining the slot **506** are perpendicular to the bare fiber **BF**. Jeong, Col. 4, lines 22-31; FIGS. 5 & 7. The block **30** has a plurality of V-grooves **310** that receive the fiber ends **BF** and a stress-relief-depth area **302** for securing the fiber optic cable **BF**. Jeong, Col. 4, lines 50-59.

7. Among the optical devices with which I was familiar prior to the filing date of Application Serial Number 10/672,595, were devices of the type shown in the patents listed in paragraphs 5 and 6 and described as prior art in Application Serial Number 10/672,595.

8. In the design and construction of a optical devices such as the ones described in Application Serial Number 10/672,595, including the prior art optical devices, one skilled in the art is familiar with fiber optical devices and the various methods of securing the fiber optic cable ends and other associated optical elements.

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9. I have reviewed the U.S. Patent and Trademark Office Action, Paper Number 20050518, which contains the following statement on pages 3 to 6 with respect to the specification of Application Serial Number 10/672,595:

Claims 1-3, 5, 8-11, and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,757,471 to Jeong et al. in view of U.S. Patent 6,282,349 to Griffin. Jeong teaches an optical block assembly having a first optical member **BF/BF** and a second member for fixing and supporting the first optical member. (See at least **Fig. 7** and its descriptions) The second member includes a cover **C5** and a block **30** with V-grooves (aperture) **310** to receive the first optical member **BF/BF**. Jeong further teaches that the cover **C5** has two slots/openings **506** formed thereon in parallel, symmetrically and diametrically (exactly opposite) with respect to the inserted first optical member **BF/BF** and the V-grooves **310**. (See at least **Fig. 5** and its descriptions) Ridges **504/505** have inner surfaces facing each other that are perpendicular to the first optical member **BF/BF**. Jeong still further teaches that, while in use, an adhesive, epoxy-resin B, is filled in and hardened. Jeong does not teach the adhesive having a high viscosity so that it does not wick. Griffin teaches a method of using high viscosity adhesive to secure optical fibers inside ferrules so that the adhesive cures before it can wick. (See at least **column 2, paragraph 1**) It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a high viscosity adhesive in fixing the first optical member of Jeong. The motivation would be to prevent the adhesive from wicking to the end(s) of the block and contaminate the terminations of the first optical member. With reference to claim 3, since epoxy of amorphous silica is known to be an epoxy with high viscosity, (e.g. U.S. Patent 5,344,635) it would have been obvious to use it for the same motivation as well.

Insofar as the examiner can understand claim 2 due to the § 112 rejection, the adhesive is constrained within outer boundaries of the optical black assembly, as clearly seen in Figs. 7-9.

With specific reference to claims 5 and 24, Jeong and Griffin discloses the claimed invention except for a particle size of amorphous silica. Since the applicant has not disclosed that a size of less than or equal to 10pm solves any stated problem or is for any particular purposes, ([0034]) it would have been obvious to one having ordinary skill in the art to optimize the size of amorphous silica particles as needs arise. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955) The motivation would be to provide an epoxy resin composition excellent in confidence for reflow resistance at a high temperature and moldability, and to provide a semiconductor device sealed with the epoxy resin composition. (e.g. JP2002022563 to Oura et al.)

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With specific reference to claim 9, insofar as the examiner can understand the claim due to the § 112 rejection, the applicant is simply switching the labels "first member" and "second member" on separate parts of the optical device. This is rejected by designating part **BF/BF** of Jeong as the second member, and designating parts **C5** and **30** of Jeong as the first member.

With specific reference to claim 11, Jeong and Griffin does not teach the third member and the second aperture to receive the third member, however, the applicant is creating a duplication of what is described in claim 1 and Jeong discussed in related art that two sets of fibers (first and third members) can be connected via an optical-fiber block. (See at least Fig. 1 and its descriptions) It would have been obvious to one having ordinary skill in the art at the time the invention was made connect the first member (optical fiber) to the third member (optical fiber), since it has been held that mere duplication of essential working parts of a device involves only routine skill in the art. St. Regis Paper Co, v. Bemis Co., 193 USPQ 8. The motivation would be to create a WDM communication system able to transmit multiple wavelengths through a single fiber.

Claims 27-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. and Griffin. A method as claimed by the applicant for forming the optical device previously described closely adhered to the components previously rejected by Jeong and Griffin and the first member would be visible through the slots **506** prior to a step in the method where the adhesive is filled into said slots. Jeong and Griffin do not teach the adhesive being cured as a final step of the method, but curing epoxy adhesive is well known in the art as a critical step of securing optical fibers within optical devices such as connectors, and it would have been obvious to one having ordinary skill in the art at the time the invention was made to include this step in a method of creating optical device. The support of this includes, for example, U.S. Patent 5,109,460 to Baek et al., where optical fibers are secured in V-grooves by epoxy. The motivation would be to harden the epoxy and limit unneeded movements of optical fibers within the device.

### **Examiner's Statement Regarding the Jeong Patent**

10. The statement from the Examiner quoted in Paragraph 9 is incorrect with respect to certain disclosures contained in the Jeong patent. The Examiner's assertions are not correct, for the following reasons:

11. The Examiner's statement "The second member includes a cover **C5** and a block **30** with V-grooves (aperture) **310** to receive the first optical member **BF/BF**" is incorrect because the V-grooves **310** disclosed in Jeong are not apertures that

receive a member, as one skilled in the art would understand the term. A common definition of the term aperture is an opening or a hole. This definition is supported by and consistent with Application Serial Number 10/672,595. A common definition of a V-groove is a long, narrow furrow or channel with two walls meeting to form an acute angle. This definition is supported by and consistent with the disclosure in the Jeong patent. Accordingly, Jeong does not disclose a member having an aperture because V-grooves are not apertures.

12. Further, the Examiner incorrectly asserts that the V-grooves **310** are apertures that receive the first member. A common definition of the term receive is to contain or to hold, as would a member be if it were inserted into an opening or hole. This definition is supported by and consistent with Application Serial Number 10/672,595. Although Jeong discloses the fiber ends **BF** cradled in the V-grooves **310**, the V-grooves **310** cannot be said to contain the fiber ends **BF**. See Jeong, FIGS. 3, 7-10. Accordingly, Jeong does not disclose an aperture receiving a first member.

13. The Examiner's statement "Jeong further teaches that the cover **C5** has two slots/openings **506** formed thereon in parallel, symmetrically and diametrically (exactly opposite) with respect to the inserted first optical member **BF/BF** and the V-grooves **310**. (See at least Fig. 5 and its descriptions) Ridges **504/505** have inner surfaces facing each other that are perpendicular to the first optical member **BF/BF**" is incorrect because, first, Jeong discloses a single slot **506** and, second, the slots **506** in the cover **C5** of the Jeong device are not diametrically opposite the fiber end **BF**.

14. With respect to the first reason the above statement is incorrect, in one embodiment, the cover **C5** disclosed by Jeong has ridges **504, 505** that define a slot or channel **506**. Jeong, Col. 4, lines 22-24; FIG. 5. The cover **C5** has two ridges **504, 505** that are each continuous in length. Jeong, FIG. 5. The slot **506** is defined by the ridges **504, 505** and the inside surface of the cover **C5**. *Id.* Other than the adhesive, which fills the slot **506**, there is no other member, object, or component disclosed by Jeong that would divide the single slot **506** into two slots. See Jeong,

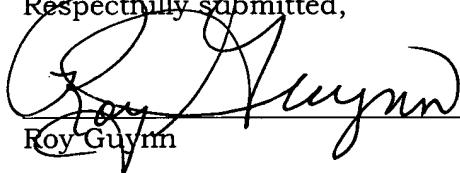
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generally. Further, the single slot **506** is a single opening because there is no boundary dividing the single opening into two distinct openings. One skilled in the art would view the cover **C5** disclosed in Jeong as having a single slot, or opening, **506**. Accordingly, Jeong does not disclose two slots or openings with respect to the fiber end **BF** in the cover **C5**.

15. With respect to the second reason the above statement is incorrect, the cover **C5** of the Jeong device has the ridges **504**, **505** sitting on and perpendicular to the fiber ends **BF**. Jeong, Col. 4, lines 22-31. In order for two items to be diametrically opposite a member, it must be possible for a line to pass through the center of the member have the line on side of the center pass through one item and the line on the other side of center pass through the other item. That is, a line passes through one item, the center of the member, and then the other item. Diametrically opposite is a basic geometrical configuration that would be understood by one skilled in the art. The description of diametrically opposite is consistent with the how the phrase is used in Application Serial Number 10/672,595. Assuming that the two ends of the slot **506** disclosed by Jeong are the slots or openings as referred to by the Examiner, the two ends of the slot **506** are not diametrically opposite any of the fiber ends **BF**. See, Jeong, FIG. 7. Accordingly, Jeong does not disclose diametrically opposite slots or openings with respect to the fiber end **BF** in the cover **C5**.

Respectfully submitted,



Roy Guynn

August 24, 2005

Date